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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/015,650	12/17/2001	Gyoo-Chul Jo	053785-5043	8522
9629	7590	10/23/2003		EXAMINER
				CHEN, KIN CHAN
			ART UNIT	PAPER NUMBER
			1765	
				DATE MAILED: 10/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/015,650	JO ET AL.
	Examiner	Art Unit
	Kin-Chan Chen	1765

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on 01 September 2003.

2a) This action is **FINAL**.                                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 1-4, 7-10 and 12-17 is/are pending in the application.

4a) Of the above claim(s) 1-4 and 7 is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 8-10 and 12-17 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
 If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
 \* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
 a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) Notice of References Cited (PTO-892)                                    4) Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)                            5) Notice of Informal Patent Application (PTO-152)  
 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.                            6) Other: \_\_\_\_\_

## DETAILED ACTION

### ***Specification***

1. The abstract of the disclosure is objected to due to the election of the method (September, 2003). Correction is required. See MPEP § 608.01(b).

Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

### ***Election/Restrictions***

2. Applicant's election of Group II, claims 8-10 and 12-17 in September 2003, is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

***common ownership***

3. Applicant's statement "the subject matter of the Chae et al. and the present invention were, at the time the invention was made, commonly owned by LG. Phillips LCD Co., Ltd." is deemed persuasive. Therefore, the rejections relying upon Chae et al. is withdrawn.

***Claim Rejections - 35 USC § 112***

4. Claims 8-10 and 12-17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification.

In claims 8 and 12, "a third copper" is new matter.

Claims 8-10 and 12-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 8 and 12, "a third copper" is vague and indefinite. "third copper" is unclear without specifying where are the first copper and second copper in the claim.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 8-10 and 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Korenowski (US 4,140,772) in view of admitted prior art and Hong et al. (US 6,130,443; hereinafter "Hong").

Korenowski teaches an etchant comprising hydrogen peroxide and a mixed solution including an acid such as sulfuric acid or nitric acid. The etchant may include a hydrogen peroxide stabilizer (col. 2, lines 1-3, 36-38).

Korenowski teaches that the above etchant may be used to etch metals such as copper, alloy of copper, molybdenum and the like. Therefore, it would have been obvious to one with ordinary skill in the art to etch copper, alloy of copper, molybdenum or the combination thereof (so-called double-layered metal layer in the instant claims). Korenowski is not particular about the structure that being subjected to etching in its process. The claimed invention differs from Korenowski by specifying the conventional method of forming an array substrate for use in a TFT-LCD device. The admitted prior art and Hong are relied on to show said conventional method. The admitted prior art teaches forming a gate line and gate electrode; forming an active layer and an ohmic contact layer thereon; forming a double-layered data line, a double-layered source electrode line, a double-layered drain electrode line using an etchant and forming a pixel electrode contacting the double-layer drain electrode. The double layer may be copper or alloy of copper with molybdenum (see pages 4-6 of the specification; Fig. 1

and 2). Hong teaches forming a gate line and gate electrode; forming an active layer and an ohmic contact layer thereon; forming a triple-layered data line, a triple-layered source electrode line, a triple-layered drain electrode line using an etchant and forming a pixel electrode contacting the drain electrode (see Figs 4 and 5; col. 4). Because it is a conventional method and it is disclosed in the admitted prior art and Hong, hence, it would have been obvious to one with ordinary skill in the art to use the etchant of Korenowski in the conventional method of forming an array substrate for use in a TFT-LCD device in order to provide their art recognized advantages and produce an expected result. It is noted that applicant did not traverse the aforementioned conventionality (e.g., conventional method, obviousness), which have been stated in the office action in April 2003.

The use of materials to perform their known functions in a conventional process is obvious. *In re Raner* 134 USPQ 343.

The performance of two steps **simultaneously** (or alternately) which have previously been performed in sequence was held to have been obvious. *In re Tatincloux* 108 USPQ 125.

It is noted that in claims 15 and 17, applicant only further limits the organic acid or neutral salt in the group which at least one is included in a mixed solution. However, it is not required that the organic acid or neutral salt be chosen from the group. Therefore, claims 15 and 17 are rejected for the same reasons as claim 8.

***Response to Arguments***

7. Applicant's arguments filed July 2003 have been fully considered but they are not persuasive.

Applicant has argued that there is no motivation to modify the teachings of Korenowski. It is not persuasive. As has been stated in the office action, it would have been obvious to one with ordinary skilled in the art to form an array substrate for use in a TFT-LCD device using conventional method. The admitted prior art and Hong et al. (US 6,130,443) are only as evidences of the conventional method statements. The use of materials to perform their known functions in a conventional process is obvious. In re Raner 134 USPQ 343.

***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kin-Chan Chen whose telephone number is (703) 305-0222. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on (703) 305-2667. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-2934.

  
K. C. Chen  
KIN-CHAN CHEN  
PRIMARY EXAMINER